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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/650,055	08/26/2003	Bernhard Sell	P2001,0119	7375

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EXAMINER
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SCHILLINGER, LAURA M

ART UNIT	PAPER NUMBER
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2813

DATE MAILED: 02/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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**Office Action Summary**

Application No.

10/650,055

Applicant(s)

SELL ET AL.

Examiner

Laura M. Schillinger

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 06 December 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) 1-11, 14 and 15 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 12, 13 and 16-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
 Paper No(s)/Mail Date 8/26/03.
- 4) ☐ Interview Summary (PTO-413)  
 Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

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## DETAILED ACTION

### *Election/Restrictions*

Applicant's election of claims 12-13 and amended claims 16-19 in the reply filed on 12/06/04 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement pertaining to the remaining withdrawn claims, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claims 1-11 and 14-15 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected claims, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 12/06/04.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 12-13, 16-19 are rejected under 35 U.S.C. 102(a) as being anticipated by Gambino et al (EP 0967643 A2).

Gambino et al teaches the following claimed limitations as cited below:

12. A method for fabricating a trench capacitor, which comprises:

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etching a trench into a main surface of a silicon substrate (Col.2, lines: 1-5);

producing covered silicon regions by applying a covering material to regions of the trench on which a lower, metallic capacitor electrode should not be formed (narrow region-Col.2, lines: 1-10);

forming the lower, metallic capacitor electrode in a self- aligned manner by selectively forming a metal silicide on uncovered silicon regions such that the capacitor at least partially configured in the trench and the lower, metallic capacitor electrode adjoins a wall of the trench (Col.2, lines: 10-15); and

after forming the lower, metallic capacitor electrode, providing a storage dielectric and an upper capacitor electrode (Col.4, lines: 1-10).

The method according to claim 12, which further comprises selecting the covering material from a group consisting of silicon nitride, silicon dioxide, and a combination of silicon nitride and silicon dioxide (Col.3, lines: 35-40).

16. The method according to claim 12, wherein the step of selectively forming the metal silicide on the uncovered silicon regions includes:

depositing a metal being suitable for forming a metal-silicon heat treatment compound with uncovered silicon in a subsequent step (Col.2, lines: 50-60);

performing a heat treatment at a predetermined atmosphere (Col.2, lines: 50-60); and

predetermined temperature in selectively removing the metal that was not converted into silicide (Col.6, lines: 40-60).

17. The method according to claim 16, wherein the heat treatment step is carried out at a temperature of 600 to 1000 degrees C in a nitrogen atmosphere (Col.2, lines: 50-60 and Col.6, lines: 25-35).

18. The method according to claim 16, wherein the heat treatment step is performed for a duration such that only a part of the metal facing the uncovered silicon forms a metal-silicon compound (Col.6, lines: 40-50).

19. The method according to claim which further comprises using a metal selected from a group consisting of tungsten, titanium, molybdenum, tantalum, cobalt, nickel, niobium, platinum, palladium and rare earths to form the metal silicide (Col.6, lines: 1-10), performing a heat treatment step at a temperature of 600 to 1000 degrees C in a nitrogen atmosphere (Col.6, lines: 20-35) for a duration such that only a part of a metal facing an uncovered silicon forms a metal-silicon compound, and selectively depositing metal silicide for a vapor phase on uncovered silicon regions at locations where a lower capacitor electrode will be formed (Col.6, lines: 40-55).

### *Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laura M. Schillinger whose telephone number is (571) 272-1697. The examiner can normally be reached on M-T, R-F 7:00-5:00.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl W. Whitehead, Jr. can be reached on (571) 272-1702. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



LMS

02/06/05